



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,487	05/17/2005	Gerard Vincent Monaghan	RR-584 PCT/US	3934
20427	7590	07/08/2010	EXAMINER	
RODMAN RODMAN 10 STEWART PLACE SUITE 2CE WHITE PLAINS, NY 10603			BOYER, RANDY	
			ART UNIT	PAPER NUMBER
			1797	
			MAIL DATE	DELIVERY MODE
			07/08/2010	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/535,487	<b>Applicant(s)</b> MONAGHAN ET AL.	
	<b>Examiner</b> RANDY BOYER	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                     |                                                                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                         | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Reopening of Prosecution***

1. Prosecution on the merits of this application is reopened on claims 2-26, considered unpatentable for the reasons indicated below.

In view of the appeal brief filed on 3/5/2010, PROSECUTION IS HEREBY REOPENED. The new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Glenn Caldarola/

Supervisor 1797

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 2-17 and 19-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Jewell (2,717,867).

4. With respect to claim 26, Jewell discloses a process for converting a liquid feed material into a vapor phase product comprising: (a) providing a fluid bed (21) comprising solid particles and a fluidizing medium (supplied via aeration supply lines (22, 23)), wherein the fluidizing medium is moving in a substantially vertical fluidizing direction (see Jewell, Fig. 1 and Fig. 2) and wherein the solid particles are at a conversion temperature which is suitable for facilitating the conversion of the liquid feed material to the vapor phase product (see Jewell, column 2, lines 45-51; and column 3, lines 35-41 and 58-63); (b) moving the solid particles in a substantially horizontal solid transport direction from an upstream horizontal position to a downstream horizontal position (see Jewell, Fig. 1 and Fig. 2; and column 5, lines 43-53); (c) introducing the liquid feed material (supplied via process line (17)) directly<sup>1</sup> to the fluid bed (21) at a feed zone located between the upstream horizontal position and the downstream horizontal

---

<sup>1</sup> Jewell clearly discloses that a portion of the oil coming into contact with the solid particles remains “unvaporized” (see Jewell, column 3, lines 70-72). Jewell explains that “the unvaporized portion is absorbed by the coke which is [then] settled onto the upper surface of the fluid bed of coke distribution

Art Unit: 1797

position in order to facilitate the conversion of the liquid feed material into the vapor phase product (see Jewell, Fig. 1 and Fig. 2); (d) maintaining the solid particles as fluidized solid particles in the feed zone by introducing the fluidizing medium to the fluid bed in the feed zone (see Jewell, column 3, lines 11-21); and (e) collecting the vapor phase product (via product outlet lines (49)).

5. With respect to claim 2, Jewell discloses wherein the solid particles are collected (in passageway (32)).

6. With respect to claim 3, Jewell discloses wherein the step of providing the fluid bed comprises introducing the solid particles at the upstream horizontal position and wherein the step of collecting the solid particles comprises collecting the solid particles at the downstream horizontal position (see Jewell, Fig. 1 and Fig. 2).

7. With respect to claim 4, Jewell discloses a step of regenerating the solid particles for re-use after collecting the solid particles (see Jewell, column 6, lines 68-75; column 7, lines 1-4; and Fig. 1).

8. With respect to claims 5 and 6, Jewell discloses wherein the step of regenerating the solid particles is comprised of heating the solid particles to the conversion temperature (see Jewell, column 7, lines 5-34; and Example).

9. With respect to claims 7 and 8, Jewell discloses wherein the upstream horizontal position is at a higher elevation than the downstream horizontal position so that the solid particles move in the solid transport direction from the upstream horizontal position to

---

*plate 20*" (see Jewell, column 3, lines 70-74) (emphasis added). Thus, Jewell provides clear disclosure for "introducing the *liquid* feed material *directly* to the fluid bed."

Art Unit: 1797

the downstream horizontal position under the influence of gravity (see Jewell, Fig. 1 and Fig. 2).

10. With respect to claim 9, Jewell discloses wherein the step of providing the fluid bed is comprised of introducing the fluidizing medium at a lower vertical position below the solid particles so that the fluidizing direction is substantially upward (see Jewell, Fig. 1 and Fig. 2).

11. With respect to claims 10-14, Jewell discloses wherein the step of introducing the liquid feed material to the fluid bed at the feed zone is comprised of spraying the liquid feed material so that the liquid feed material contacts the solid particles as droplets; wherein the liquid feed is sprayed within the fluid bed so that the droplets penetrate the fluid bed; wherein the liquid feed material is sprayed so that the droplets contact the solid particles from a spraying direction which is substantially perpendicular to the solid transport direction; wherein the spraying direction is a substantially vertical direction; and wherein the spraying direction is substantially opposite to the fluidizing direction (see Jewell, column 3, line 75; column 4, lines 1-47; and Fig. 1 and Fig. 2).

12. With respect to claim 15, Jewell discloses a step of quenching the vapor phase product after collecting the vapor phase product in order to minimize further conversion of the vapor phase product (see Jewell, column 9, lines 17-29).

13. With respect to claims 16 and 17, Jewell discloses collecting the fluidizing medium with the vapor phase product at an upper vertical position (e.g., through outlet lines (49)) above the solid particles (see Jewell, Fig. 2 and accompanying text); and separating the fluidizing medium and the vapor phase product after collecting the fluidizing medium and the vapor phase product (see Jewell, column 9, lines 50-53).

Art Unit: 1797

14. With respect to claims 19-21, Jewell discloses wherein the liquid feed material is comprised of liquid hydrocarbon; heavy hydrocarbon; or heavy oil or a heavy fraction of a crude oil (see Jewell, column 1, lines 15-30).

15. With respect to claim 22, the hot coke particles of Jewell act as a catalyst in the coking reaction and conversion of the liquid feed material into vapor phase product (see Jewell, column 1, lines 46-49; and column 5, lines 14-24 and 36-40).

16. With respect to claim 23, Jewell discloses wherein the step of collecting the vapor phase product is comprised of collecting the vapor phase product at a plurality of vapor phase product collection locations (49) spaced horizontally between the upstream horizontal position and the downstream horizontal position (see Jewell, Fig. 2 with accompanying text).

17. With respect to claim 24, Jewell does not explicitly disclose wherein the composition of the vapor phase product varies amongst the vapor phase collection locations.

However, Jewell discloses four vapor phase collection locations (49) spaced along the entire length of the drum (19) (see Jewell, Fig. 2). In such an apparatus, the vapor phase product removed from the first vapor phase collection location (49) nearest the upstream end of the drum (19) would *necessarily* be different in composition than the vapor phase product removed from the fourth vapor phase collection location (49) nearest the downstream end of the drum (19) given the difference in residence time of the coke particles (21) directly beneath the fourth vapor phase collection location (49).

Thus, Jewell provides inherent disclosure for “the composition of the vapor phase product [varying] amongst the vapor phase collection locations.”

Art Unit: 1797

18. With respect to claim 25, Jewell discloses a step of collecting a vaporized fraction of the liquid fraction of the liquid feed material at a vapor phase product collection location which is adjacent to the feed zone (in vapor product outlet lines (49)) (see Jewell, Fig. 1 and Fig. 2).

### ***Claim Rejections - 35 USC § 103***

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

21. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to



Art Unit: 1797

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

22. Claims 18 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell (US 2,717,867).

23. With respect to claim 18, see discussion *supra* at paragraph 4.

Jewell does not explicitly disclose wherein the solid particles are moved in the solid transport direction at a rate which is significantly larger than a rate of mixing of the solid particles in the solid transport direction.

With respect to claim 18, Jewell discloses wherein the residence time of the solid particles in the horizontally elongated drum (19) can be varied by adjusting the rate at which the solid particles are discharged into the drum and by adjusting the quantity of solid particles in the drum (see Jewell, column 5, lines 43-67).

Therefore, Examiner finds Applicant's claim 18 unpatentable in view of Jewell, given Jewell's disclosure that the rate of lateral flow of the solid particles can be freely adjusted as desired.

24. With respect to claim 24, see discussion *supra* at paragraph 16.

Jewell does not explicitly disclose wherein the composition of the vapor phase product varies amongst the vapor phase collection locations.

However, Jewell discloses four vapor phase collection locations (49) spaced along the entire length of the drum (19) (see Jewell, Fig. 2). In such an apparatus, the person having ordinary skill in the art would reasonably expect that the vapor phase product removed from the first vapor phase collection location (49) nearest the upstream end of the drum (19) would be different in composition than the vapor phase

Art Unit: 1797

product removed from the fourth vapor phase collection location (49) nearest the downstream end of the drum (19) given the difference in residence time of the coke particles (21) directly beneath the fourth vapor phase collection location (49). In this regard, Examiner notes that in considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. See MPEP § 2144.01 (quoting *In re Preda*, 401 F.2d 825, 826 (CCPA 1968)).

Therefore, Examiner finds Applicant's claim 24 unpatentable in view of Jewell's implicit disclosure for "the composition of the vapor phase product [varying] amongst the vapor phase collection locations."

### ***Conclusion***

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy Boyer whose telephone number is (571) 272-7113. The examiner can normally be reached Monday through Friday from 10:00 A.M. to 7:00 P.M. (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola, can be reached at (571) 272-1444. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 1797

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Randy Boyer/

Examiner, Art Unit 1797

/Glenn A Caldarola/

Supervisory Patent Examiner, Art Unit 17971053